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## United States Patent

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*Bruce Lehman*

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*Melvinia Gary*  
Attest

# United States Patent [19]

Nemoto

[11] Patent Number: 5,577,767

[45] Date of Patent: Nov. 26, 1996

## [54] HOUSING ASSEMBLY FOR AN AIR BAG AND VEHICLE HORN SWITCH

[75] Inventor: Hiroshi Nemoto, Mesa, Ariz.

[73] Assignee: TRW Inc., Lyndhurst, Ohio

[21] Appl. No.: 400,260

[22] Filed: Mar. 8, 1995

[51] Int. Cl.<sup>6</sup> ..... B60R 21/16

[52] U.S. Cl. .... 280/731; 200/61.54

[58] Field of Search ..... 280/728.1, 728.3,  
280/731; 200/61.54-61.57

### References Cited

#### U.S. PATENT DOCUMENTS

4,903,986	2/1990	Cok et al. ....	280/731
4,934,735	6/1990	Embach ....	280/731
5,002,306	3/1991	Hiramitsu et al. ....	280/731
5,085,461	2/1992	Shibata ....	280/731
5,085,462	2/1992	Gualtier ....	280/731
5,198,629	3/1993	Hayashi et al. ....	280/731
5,265,905	11/1993	Shelton ....	280/731
5,465,998	11/1995	Davis ....	280/731

### FOREIGN PATENT DOCUMENTS

5-16756 1/1993 Japan ..... 280/731

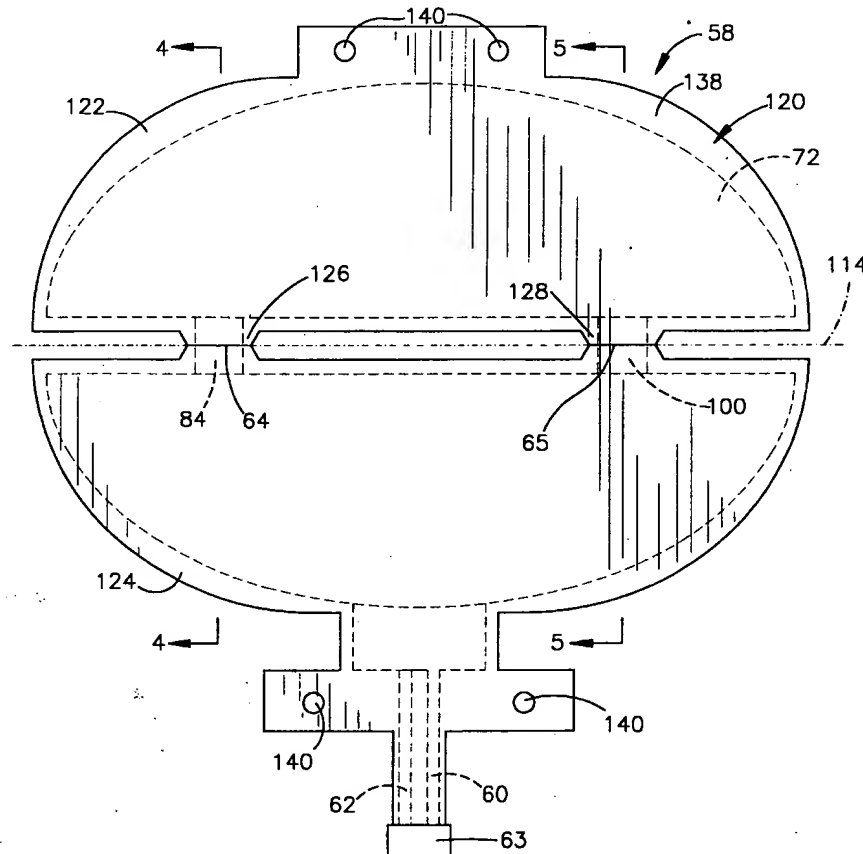
Primary Examiner—Paul N. Dickson

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### [57] ABSTRACT

An apparatus for enclosing an air bag (38) on a steering wheel (22) includes an inner cover (34) at least partially enclosing the air bag (38) and having a tear seam central portion (50) along which the inner cover ruptures upon inflation of the air bag (38). An outer cover (36) at least partially encloses the inner cover (34) and the air bag (38) and includes a tear seam central portion (49) with a length substantially equal to the length of the tear seam central portion (50) in the inner cover (34). A horn switch (58) is disposed between the inner and outer covers (34 and 36) for effecting operation of a horn. The horn switch (58) includes first and second tear seams (64, 65) aligned with the tear seam central portions (50 and 49) in the inner and outer covers (34 and 36). The first and second tear seams (64, 65) in the horn switch (58) have a combined length substantially less than the length of each of the tear seams (49 and 50).

10 Claims, 4 Drawing Sheets



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